



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,440	11/29/2006	Alain Shoutteeten	2003FR302	4132
25255 7590 03/05/2008 CLARIANT CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 4000 MONROE ROAD CHARLOTTE, NC 28205				
EXAMINER CHANDRAKUMAR, NIZAL S				
ART UNIT		PAPER NUMBER		
1625				
MAIL DATE		DELIVERY MODE		
03/05/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,440

Applicant(s)

SHOUTTEETEN ET AL.

Examiner

NIZAL S. CHANDRAKUMAR

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)
Paper No(s)/Mail Date 6/22/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

This application filed 11/29/2006 is a 371 of PCT/IB04/04158 12/15/2004, claims priority FRANCE 0315398 12/24/2003.

Claims 1-22 are pending.

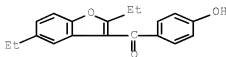
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Bisagni et al. Bulletin de la Societe Chimique de France (1960), 1968-76.

Bisagni et al. teach



corresponding to compound of formula (I) wherein R= R1 = Ethyl.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

Art Unit: 1625

subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

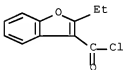
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

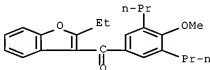
Claims 1-15 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Descamps et al. DE 2347196.

The instant claim is drawn to a) conversion of benzofuran-carboxylic acid to benzofuran-carboxylic acid halide b) treatment of the benzofuran-carboxylic acid halide in a Fridel-Crafts acylation with alkyl phenyl ether c) dealkylation of the product of the product of step b.

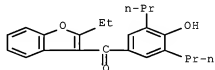
Descamps et al teach the above process of the instant claims. Thus Descamps et al teach converting 2-ethyl-3-benzofurancarboxylic acid to its chloride, treating with 2,6-Me₂C₆H₃OMe, ether cleavage of the 2-ethyl-3-(3,5- dimethyl-4-methoxybenzoyl)benzofuran



Product of Step a)



Product of Step b)



Product of Step c)

Descamps et al. does not teach the substitution of benzene ring on the benzofurancarboxylic acid. Descamps et al. also does not teach that benzene ring of the phenyl ether has to be unsubstituted. Thus the difference between the prior art and instant claim is the substitution patterns in the two

Art Unit: 1625

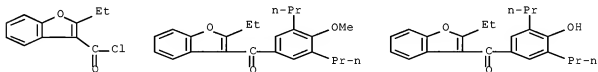
reactants. Additional differences are the reagents, solvents and reaction conditions claimed in the instant case.

The chemical reactions in the prior art process of Descamps et al. are independent of the substitution on the benzene rings because the reacting functionalities are unaffected by substitutions since the substituents do not participate in the intended reactions. It would have been obvious to one of ordinary skill in the art to modify an otherwise known process to obtain known products using analogous reagents and alternate substrates in lieu of another as the results would not have been unexpected.

Claims 1-15 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gubin et al. European Journal of Medicinal Chemistry (1974), 9(1), 19-25.

The instant claim is drawn to a) conversion of benzofuran-carboxylic acid to benzofuran-carboxylic acid halide b) treatment of the benzofuran-carboxylic acid halide in a Friedel-Crafts acylation with alkyl phenyl ether c) dealkylation of the product of the product of step b.

Gubin et al. teach the above process of the instant claims. Thus Descamps et al teach converting 2-ethyl-3-benzofurancarboxylic acid to its chloride, treating with 2,6-Me₂C₆H₃OMe, ether cleavage of the 2-ethyl-3-(3,5- dimethyl-4-methoxybenzoyl)benzofuran



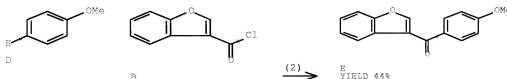
Gubin et al. does not teach the substitution of benzene ring on the benzofurancarboxylic acid. Descamps et al also does not teach that benzene ring of the phenyl ether has to be unsubstituted. Thus the difference between the prior art and instant claim is the substitution patterns in the two reactants. Additional differences are the reagents, solvents and reaction conditions claimed in the instant case.

Art Unit: 1625

The chemical reactions in the prior art process of Descamps et al. are independent of the substitution on the benzene rings because the reacting functionalities are unaffected by substitutions since the substituents do not participate in the intended reactions. It would have been obvious to one of ordinary skill in the art to modify an otherwise known process to obtain claimed products using analogous reagents and alternate substrates in lieu of another as the results would not have been unexpected.

Prior art not relied upon:

Benassi et al. Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1972-1999) (1987), (3), 351-7. For example, see the following



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

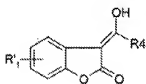
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

Art Unit: 1625

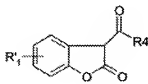
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 18-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Chatterjea (Journal of Indian Chemical Society, 1957, Vol. 34 (4), 299-305).

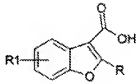
The instant claims are drawn to transformation A or B to C by heating in acid (A and B being tautomers of each other).



A



B



C

Chatterjea teaches the exact type of transformation and states that such transformations are found to be general (see page 300, second paragraph, lines 3 and 4).

Chatterjea does not teach the exact substitutions R1' and R4 of the instant claims.

The chemical reactions in the prior art process of Chatterjea is independent of the substitutions because the reaction is unaffected by substitutions since the substituents do not participate in the intended reaction. It would have been obvious to one of ordinary skill in the art to modify an otherwise known process to obtain claimed products using analogous reagents and alternate substrates in lieu of another as the results would not have been unexpected.

No claim is allowed.

Art Unit: 1625

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIZAL S. CHANDRAKUMAR whose telephone number is (571)272-6202. The examiner can normally be reached on 8.30 AM - 4.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571 0272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nizal S. Chandrakumar

/D. Margaret Seaman/
Primary Examiner, Art Unit 1625